

### Supporting Information 3: Description of Metabolites (Name, initial concentration, Half-life and Sink)

Table S3: **Metabolite description.** Names, abbreviations, initial concentrations and degradation rates (half lifes). Half lifes were converted to min<sup>-1</sup> and allowed to vary +/- 10% around their measured value. \*Estimated parameter

Met.	Name	Init Conc [mM]	Half Life [1/min]			Sink ( $K_{sink}^{Met}$ )
			70 °C	80°C	Par.	
Glc	glucose (internal)	$\frac{Km_{vGDH}^{Glc} Vm_{vUp}^{Glc}}{Vm_{vGDH}^{Glc} - Vm_{vUp}^{Glc}} = 0.22$				
D-Gat	D-gluconate	$\left( \frac{Glc Km_{vGAD}^{DGat} Vm_{vGDH}^{Glc}}{Glc0 Vm_{vGAD}^{DGat} + Km_{vGDH}^{Glc} Vm_{vGAD}^{DGat} - Glc0 Vm_{vGDH}^{Glc}} = 0.09 \right)$				
KDG	2-keto-3-deoxygluconate	0.1				
KDPG	2-keto-3-deoxy-6-phosphogluconate	0.1				
GAP	(glyceraldehyde 3-phosphate	0.1	0.056	0.433	$K_{deg}^{GAP}$	$K_{sink}^{GAP} = 8.99 *$
3-PG	3-phosphoglycerate	0.1				
1,3-BPG	1,3-bisphosphoglycerate	0.1	1.058	4.027*	$K_{deg}^{BPG}$	
2-PG	2-phosphoglycerate	0.1				
GA	glyceraldehyde	0,1				
Gly	glycerate	0.1				
PEP	phosphoenolpyruvate	0.1	0.008	0.032	$K_{deg}^{PEP}$	
Pyr	pyruvate	0.1				$K_{sink}^{Pyr} = 3.63 *$

